

SWOT ANALYSIS OF THE PROCESS IMPROVEMENT IN THE COMPANY PRODUCING ELECTRIC SOCKETS

Abstract: In the chapter the concept of the improvement was presented. The electric socket was presented as the research object, so different types of the electric socket and technical drawing of the chosen electric socket were also presented. The theoretical basis connected with SWOT analysis were show. In the research part the SWOT analysis for the chosen company was presented.

Key words: improvement, electric socket, SWOT analysis

6.1. The concept of the improvement

There are different concepts of “improvement” term. In the literature, the improvement is called the action, the results of which are greater today than yesterday, and tomorrow the results will be greater than today (BORKOWSKI S., JEZIORSKI L. 2008). Products, and more specific their features, such as shape, can be improved. Improvement can also be used in case of the process, if it is possible to measure the process. In the literature there is also the definition of "quality improvement", which says that it is a part of quality management, which aims to increase the ability to meet the quality requirements (ŁUNARSKI J. 2008). It should be remembered that a necessary condition for naming the operations as the improvement is that this process must be dynamic. In Figure 6.1 a scheme of improvement is presented.

The basic condition for improvement is to identify the particular area

¹ dr inż., Czestochowa University of Technology, Faculty of Management, Institute of Engineering Production, e-mail: manuela@gazeta.pl

² mgr inż., The Czestochowa University of Technology, Faculty of Management, Institute of Production Engineering, e-mail: m.jagusiak-kocik@o2.pl

for which customers expect a clear requirements or an area that generates losses. In Figure 6.1 a situation that illustrates the fact that with the passage of time the customer's requirements for quality (product, process) grows, is presented.

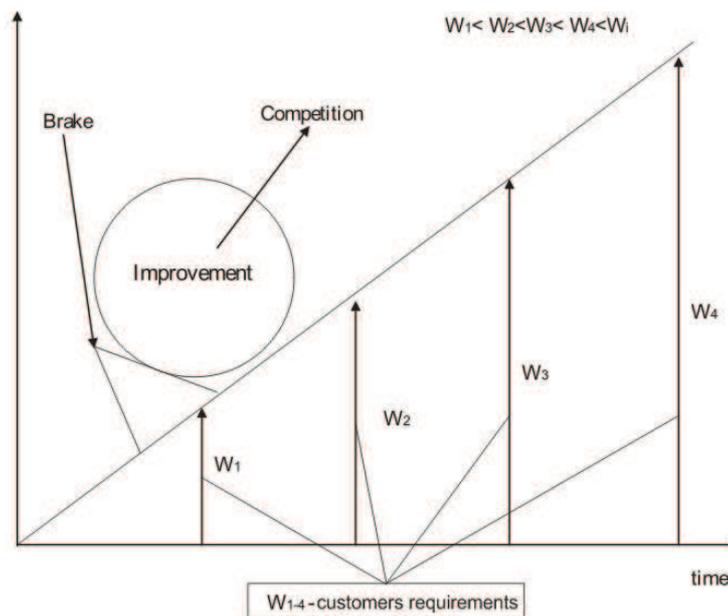


Fig. 6.1. The improvement scheme.

Source: BORKOWSKI S., JEZIORSKI L. 2008

In order to meet customer requirements at levels W_2 , the company must firstly meet the needs of the requirements of the previous level (W_1), so there is a need for improvement here. The process of improvement is compared in the literature to the ongoing uphill wheel. In this way it seeks to achieve the following levels of customer requirements. In order to a symbolic circle did not undergo regression, a variety of brakes for maintaining a certain level of excellence is applied. These brakes can be, e.g., legislation, quality systems, technical requirements, standards, and more.

The improvement can be done by using different kinds of rules or methods, which include, among others: Toyota management principles, Poka-Yoke system, 5xwhy? method, 5S method, Kaizen approach, a new quality management tools, and more. The main element, that affects the rising "improve" wheel on an inclined plane, is the competition (BORKOWSKI S., ULEWICZ R. 2009).

6.2. Characteristics of the research object

The single electric socket-contact with earth terminal produced by the company located in the province of Silesia was presented. This product is the series "TOP" shown in Figure 6.2. This is the electric socket with following technical parameters: 16A, 250V, 3520W, IP-20, clamp screw. Commercial description of the socket: GP-1TZ/00.



Fig. 6.2. Electric socket.

Source: information from the research company

All over the world different types of sockets are used. Now we can distinguish as many as 14 types of socket-contacts (DUBRAWski A.

2004). These sockets are marked with letters of the alphabet in sequence, and thus divided into the following types:

- Type A – for American plugs, this type of socket is used in most countries North and Central America.
- Type B – for modified American plugs.
- Type C – for European plugs, this type of electric socket does not have a earth terminal, is the most popular in Europe outside the United Kingdom, Ireland, Cyprus and Malta.
- Type D – for old British plugs, also used in India, Nepal, Namibia and Sri Lanka.
- Type E – for European plugs, this type of electric socket has a earth terminal.
- Type F – for plugs with earth terminal Schuko, also called German standard.
- Type G – for British plugs.
- Type H – for plugs used only in Israel.
- Type I – for Australian plugs, used in Australia, Argentina, New Zealand and Papua New Guinea.
- Type J – for Swiss plugs, used mainly in Switzerland but also in Liechtenstein, Rwanda, Ethiopia and the Maldives.
- Type K – for Danish plugs, apart Denmark this type of electric socket is used in Senegal, Bangladesh, the Maldives and Greenland.
- Type L – for Italian plugs, this standard is also used in countries such as Cuba, Ethiopia, Chile and Tunisia.
- Type M – for South African plugs.
- Type E/F – this socket is prepared for plug-in hybrid of types E and F, this type is also called as the "Uni-Schuko".

Components of the single electric socket with earthing are following:

- clamp screw,
- nut,
- socket contact,
- earth terminal,

- body,
- pins,
- lentil head screw,
- cover.

The single electric socket-contact with earth terminal produced by the research company, apart from the CE safety mark, has other signs and certificates indicating a high level of quality, competitiveness, and security of utilization of the analyzed product. In addition, the company has the right to label a product B safety mark.

In Figure 6.3 the technical drawing of the electric socket contact with earthing is presented.

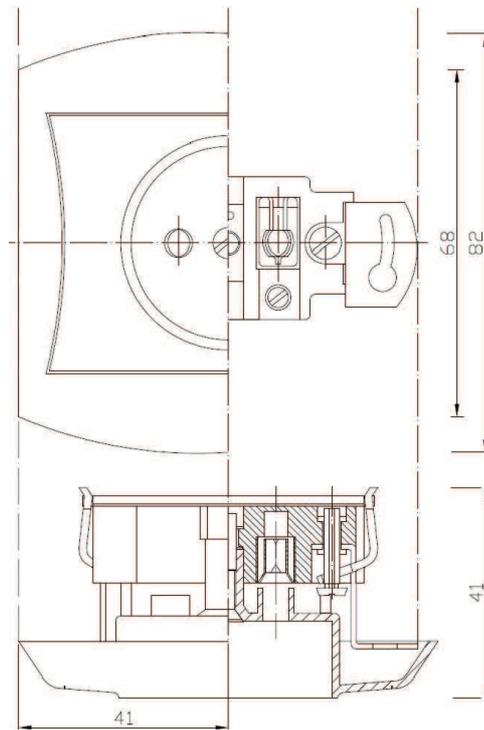


Fig. 6.3. Technical drawing of the electric socket.

Source: information from the research company

6.3. SWOT analysis

The SWOT analysis (alternatively SWOT Matrix) is one of the most popular analytical techniques. This method, through the analysis of internal and external business environment, allows to identify its strengths and weaknesses, opportunities and threats (GRUDZIEWSKI W., HEJDUK I. 2008). This analysis is a tool to optimize the business management strategy or build a new strategic plan. The main objective of this study is to determine the current position of the test object and its prospects, and with the best strategies (KONSTANCIAK M. 2012, INGALDI M., ROSAK-SZYROCKA J., JAGUSIAK-KOCIK M. 2012).

The SWOT analysis can be carried out for a product, place, industry or person. It involves specifying the objective of the business venture or project and identifying the internal and external factors that are favourable and unfavourable to achieving that objective. The technique is credited to Albert Humphrey, who led a convention at the Stanford Research Institute (now SRI International) in the 1960s and 1970s using data from Fortune 500 companies. The degree to which the internal environment of the firm matches with the external environment is expressed by the concept of strategic fit (PRUSAK R., KARDAS E., SKUZA Z. 2012).

The SWOT analysis allows grouping factors affecting the organization into two groups, namely the factors: external and internal. Name described the SWOT analysis is derived from the first letters of the words classifying factors, namely (LESTYÁNSZKA ŠKŮRKOVÁ K., KUDIČOVÁ J. 2011, DZIUBA S.T., SZOŁTYSEK K., KOZYRA C. 2011, COLBERT F):

- S - Strengths. The strengths segment of a SWOT analysis provides an area to list everything done right either individually or as an organization. This section contains both strengths within the organization and external strengths, such as client relationships. Organizations should seek to reflect their strengths honestly to maintain the integrity of the SWOT analysis. Feedback from others

can also provide clarification on strengths captured in this segment of the SWOT analysis.

- W - Weaknesses. The weaknesses segment contains needed improvements within an organization or personally. Group sessions can help organizations identify weak areas. Analysis in this segment can provide a clear list of areas that need a development plan to remedy the issues identified. Tools such as action plans and goal formation provide ways to improve weaknesses. From a competitive standpoint, organizations should attempt to mitigate weaknesses as soon as possible since they can offer an undesired opportunity to their competitors.
- O - Opportunities. Opportunities for improvement exist within all organizations. This makes the opportunities segment of the SWOT analysis important. Within this segment, organizations identify internal and external opportunities. To have a comprehensive list, organizations sometimes use group facilitation to identify these opportunities. Organizations can add both current and future opportunities to this segment of the quadrant.
- T - Threats. By examining threats, such as new competitors in the market, organizations can implement counter measures prior to the threat occurring. To ensure success, organizations may need to deal with both future and present threats. For individuals creating a SWOT analysis for personal development purposes, an example of a threat such as job security problems, would reside in this section of the SWOT analysis.

In Table 6.1 a summary of internal factors and external factors of the company producing electrical sockets is presented. In order to conduct a SWOT analysis in Table 6.1 both strengths of the company but also its weaknesses were listed. The analysis has been subjected to the opportunities and threats that exist in the company environment.

Table 6.1. List the strengths and weaknesses of the company producing electrical sockets, opportunities and threats for the company

Strengths	Opportunities
<p>S1 - high quality of product, S2 - a relatively low price of product, S3 - wide modern assortment of products, S4 - good work organization, S5 - place of work rotation - versatility employees, S6 - highly qualified staff, S7 - quality management system according to ISO 9001.</p>	<p>O1 - access to foreign markets, O2 - existence of DIY hyper-markets, O3 - open markets of the European Union, O4 - a large number of young skilled people in the labor market, O5 - availability of modern machinery and equipment on the market.</p>
Weaknesses	Threats
<p>W1 - little noticeable advertising, W2 - "the aging" a group of skilled workers, W3 - partly obsolete machinery.</p>	<p>T1 - big competition, T2 - demand conditioned by seasons, T3 - economic recession, T4 - increase of raw materials prices, T5 - constantly increasing fees for utilities, T6 - the crisis in the construction industry.</p>

Source: Own study

In Table 6.2 summary of the strengths and weaknesses of the research company along with the opportunities and threats as a result of which there were marked company's strategic objectives, the achievement of which will help the company to enhance competitiveness and strengthen its position in the market, were presented.

Table 6.2. Summary of the strengths and weaknesses of the company with its opportunities and threats. Setting strategic goals

<p style="text-align: center;">External factors</p> <p style="text-align: center;">Internal factors</p>	<p style="text-align: center;">Opportunities</p> <p>O1 - access to foreign markets, O2 - existence of DIY hyper-markets, O3 - open markets of the European Union, O4 - a large number of young skilled people in the labor market, O5 - availability of modern machinery and equipment on the market.</p>	<p style="text-align: center;">Threats</p> <p>T1 - big competition, T2 - demand conditioned by seasons, T3 - economic recession, T4 - increase of raw materials prices, T5 - constantly increasing fees for utilities, T6 - the crisis in the construction industry</p>
<p style="text-align: center;">Strengths</p> <p>S1 - high quality of product, S2 - a relatively low price of product, S3 - wide modern assortment of products, S4 - good work organization, S5 - place of work rotation - versatility employees, S6 - highly qualified staff, S7 - quality management system according to ISO 9001.</p>	<p style="text-align: center;">Goal</p> <p>S1, S2 O2 - cooperation with networks of the large customers, S1 O3 - expansion of the EU markets, increasing sales by installing a new production line.</p>	<p style="text-align: center;">Goal</p> <p>S3 T2 - the introduction of new product series every 6 months, S3 T2 - introduction of a new innovative product - a series of surface-mounted equipment with ceramic bezel, S2 T4 - a change of supplier for “cheaper one”, S3, S4, S5 T2 - expanding the assortment of the company.</p>

Weaknesses	Goal	Goal
W1 - little noticeable advertising, W2 - "the aging" a group of skilled workers, W3 - partly obsolete machinery.	W1 O1 - increasing funds for advertising, W2 O1 - increased promotion of the company, brand, logo, W1 - modernization of the technological machinery.	W1 T1 - putting advertisements in the media with nationwide coverage, W2 T2 - increasing the collateral assortment - production concentrated not only on sockets and switches.

Source: Own study

6.4. Summary

The SWOT analysis carried out for the production company X (Table 6.2) after confrontation with each external and internal factors allowed to create main strategic goals for the company which can help to achieve a competitive advantage by the research company.

As a result of the SWOT analysis eleven goals that a company with a good use of its strengths and opportunities, or by avoiding its weaknesses and threats can be achieved in the near future and that in turn will be consistently enforced, were selected.

Bibliography

1. BORKOWSKI S., JEZIORSKI L. 2008. „Zarządzanie, Doskonalenie, Zmiany”, Wydawnictwo Humanitas, Sosnowiec.
2. BORKOWSKI S., ULEWICZ R. 2009. „Instrumenty doskonalenia procesów produkcyjnych”, Wydawnictwo PTM, Warszawa.
3. COLBERT F. Definition of a SWOT *analysis*. Demand Media, (8.11.13). <http://smallbusiness.chron.com/definition-swot-analysis-43274.html>.
4. DUBRAWSKI A. 2002. „Zasady doboru gniazd wtykowych”, Elektroinfo, Nr 4.

5. DZIUBA S.T., SZOŁTYSEK K., KOZYRA C. 2011. *Application of FAM- Fail Assessment Method- to optimization of unit costs of producing flours for special purposes*. Chapter 3. [In:] *Improvement of Production Process*. Monography. Ed. Borkowski S., Krynke M., Publisher TRIPSOFT, Trnava p.28-39.
6. GRUDZIEWSKI W., HEJDUK I. 2008 *Zarządzanie technologiami. Zaawansowane technologie i wyzwanie ich komercjalizacji*. Difin Sp. z o.o., Warszawa.
7. INGALDI M., ROSAK-SZYROCKA J., JAGUSIAK-KOCIK M. 2012. *Service Quality in the Point of the Mass Nutrition*. Chapter 1. W: *Toyotarity. Quality of Services Assessment According to BOST Method*. Monography. Editing and Scientific Elaboration BORKOWSKI S., INGALDI M. Faculty of Logistics, University of Maribor. Celje.
8. KONSTANCIAK M. 2012. *Analysis of technological strategies on the example of the production of the tramway wheels*. Archives of Materials Science and Engineering, Vol.57 Iss.2 s. s.69-74.
9. LESTYÁNSZKA ŠKŮRKOVÁ K., KUDIČOVÁ J. 2001. *The process capability study of pressing process for force closed*. [In:] *Vedecké práce MfF STU v Bratislave so sídlom v Trnave*. Research papers Faculty of Materials Science and Technology Slovak University of Technology in Trnava, Vol. 19, č. 30, pp. 51-57.
10. ŁUNARSKI J. 2008. „*Zarządzanie jakością*”, Wydawnictwo Naukowo Techniczne, Warszawa
11. PRUSAK R, KARDAS E., SKUZA Z. 2012. *Analiza strategiczna działalności przedsiębiorstwa przewozowego*, Logistyka, No 6, pp. 236 – 238.